[All dates in January except as otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
MISSISSIPPI DRAINAGE—continued					
Illinois:	*Feet*			*Feet*	
Morris, Ill.	13	23	24	13.6	23
Peru, Ill.	14	(2)	(1)	19.5	24, 25
Henry, Ill.	10	23	(1)	12.7	28
Peoria, Ill.	18	25	(1)	19.6	30
Havana, Ill.	14	(2)	2	14.7	Dec. 26
		6	(1)	16.8	31
Beardstown, Ill.	14	(2)	2	14.8	12/27, 28
		23	(1)	17.5	29-31
Pearl, Ill.	12	25	(1)	13.3	30, 31
St. Francis: St. Francis, Ark.	17	20	(1)	24.5	30
Arkansas: Yancopin, Ark.	29	28	(1)	30.5	31
Petit Jean: Danville, Ark.	20	7	7	20.1	7
		25	27	23.3	26
White:					
Calico Rock, Ark.	18	25	26	26.7	25
Batesville, Ark.	23	25	28	31.7	25
Newport, Ark.	26	26	(1)	29.0	29
Georgetown, Ark.	22	29	(1)	24.4	31
Black:					
Williamsville, Mo.	11	26	26	12.3	26
Poplar Bluff, Mo.	14	25	28	16.5	27
Corning, Ark.	11	19	(1)	14.1	31
Black Rock, Ark.	14	25	(1)	24.6	26
Cache: Patterson, Ark.	9	27	(1)	9.6	31
Sulphur:					
Ringo Crossing, Tex.	20	6	9	26.5	7
		25	29	28.4	28
Finley, Tex.	24	9	15	26.2	18
		28	(1)	26.7	29
Ouachita:					
Arkadelphia, Ark.	12	26	27	14.1	26
Camden, Ark.	30	29	(1)	31.7	30
WEST GULF DRAINAGE					
Trinity:					
Dallas, Tex.	25	25	25	27.1	25
Trinidad, Tex.	28	28	(1)	29.8	30
Guadalupe: Victoria, Tex.	16	5	6	25.9	5

[1] Continued at end of month. [2] Continued from last month.

MEAN LAKE LEVELS

NOTE.—The printing of the table Mean Lake Levels, appearing since 1914 in this space, is suspended until further notice. Readers of the REVIEW who use the data, if there be such, are asked to communicate with the editor giving their reasons for its continuance.—*Editor.*

EFFECT OF WEATHER ON CROPS AND FARMING OPERATIONS, JANUARY, 1929

By J. B. KINCER

General summary.—During the first decade the passage of a storm across the country seriously interfered with outdoor operations and was rather hard on livestock in some western sections. A generous snow cover was deposited by this storm in several interior districts and furnished ample protection against the cold which followed. Rains relieved the droughty conditions in most Southeastern States, though southern Florida remained dry. Moderate freezes occurred in the southern trucking sections of that State, but no serious damage was reported. Lower temperatures in the far Southwest were beneficial for citrus fruits and no damaging frosts occurred in south Pacific areas. Increased feeding of livestock was necessary in parts of the great western grazing area.

During the second decade the weather was again rather unfavorable for seasonal work on farms. Frequent rains in the South prevented plowing and other field operations, but there was still a deficiency of precipitation in southern Florida. The temperatures in this section were mostly favorable, although the mildness caused some apprehension as to the possible premature forcing of peach bloom, especially in Georgia. In the Northwest and most Rocky Mountain sections the period was cold, stormy, and rather hard on livestock, though the snow was beneficial for grain fields. Rain was needed in the Southwest, especially in western Texas and New Mexico, but in other sections there were some helpful falls. Much of the interior of the country was bare of snow.

During the last decade much the coldest weather of the season prevailed in many sections from the central and northern Mississippi Valley westward, preventing seasonal outside operations and causing suffering among livestock. The January snowfall was unusually heavy in the western Lake region and extreme upper Mississippi Valley, with all previous records for the month broken in some places. The southeastern part of the country again experienced unusually mild weather for the season, with peach buds reported swelling in the Fort Valley district of Georgia and early varieties of fruit beginning to bloom in extreme southern Alabama, but the reaction to colder at the close of the month was beneficial in retarding premature development. Frequent rains in the South prevented much field work and very little preparation for spring planting could be made. Moisture was still needed in southern Florida and much of the Southwest.

Small grains.—During the first decade a light to generous snowfall preceded the cold weather over much of the winter wheat belt, which afforded a protection against the severe weather. In Nebraska the snow drifted badly and left some sections uncovered, while in Kansas the ground was bare in the northwestern part and wheat was frozen down. Conditions were also rather precarious in those parts of the Ohio Valley insufficiently covered and there was a lack of covering in the middle Atlantic area. In Montana and the Rocky Mountain districts most wheat fields had some protection and in the Pacific Northwest there was an ample covering when the coldest weather occurred; low temperatures retarded growth in the Southern States.

The weather was rather unfavorable for winter wheat during the second decade in many sections of the interior, though no extensive or widespread damage was reported. In the more eastern portions of the belt abnormally high temperatures caused a rapid disappearance of the snow cover and the ground was generally bare in much of the Ohio Valley; there was some ice in parts of Illinois and heavy rains caused local flooding in both Indiana and Ohio. From the northern portions of Illinois and Missouri northward wheat fields were generally well protected and also in the northern Great Plains, the Pacific Northwest, and most Rocky Mountain sections. In the main western belt the ground was bare with wheat frozen to the ground in western Kansas and some heaving in the southeast, but apparently without serious injury. In Oklahoma the crop was making slow growth, but in the Southern States winter grains made good progress under favorable conditions.

During the last decade the weather was mostly unfavorable for winter wheat, except in the more northern portions where there was a good snow cover. There was much ice in parts of Illinois and the northern third of Indiana, with a considerable cover in much of Missouri. In Kansas the ground continued bare in the western and southern portions, with the wheat frozen to the ground; most fields were still bare in Nebraska. Conditions were better in the far Northwest, and in the South the weather was largely favorable, but in the middle Atlantic area fields were mostly bare.

Miscellaneous crops.—There was some improvement in pastures in the Gulf section during the month, and an adequate protection for meadows prevailed in the more northern sections of the country. Considerable yard feeding was necessary in the northern Great Plains, with

some suffering from the stormy weather. Some lower range remained open in Wyoming, but the generally unfavorable weather caused shrinkage of livestock, especially during the first decade when crusted snow was reported. Low temperatures caused suffering in the central Rocky Mountain area, with some shrinkage noted, and additional snows necessitated more extensive feeding. Moisture was needed in New Mexico and western Texas, but rain or snow increased the water supply in Arizona, although causing some suffering to livestock. Deep snow was hard on livestock in Utah, especially during the last decade when it hindered feeding of isolated herds. Feeding was heavy during the month in Nevada and Idaho; the cold weather was unfavorable for the growth of grass in Pacific coast sections, but livestock did well.

Conditions were favorable for winter truck most of the month in the South, although there was some retardation by cold; the reaction to lower temperatures at the close prevented premature development of vegetation. Much truck was planted in the Carolinas and conditions favored work in Florida most of the month. Much new growth of citrus was reported in Florida, with some bloom toward the close of the month; navel orange, grapefruit, and lemon picking advanced in California, although there was some frost injury in the Imperial Valley and considerable firing was necessary during the last decade.

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WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

NORTH ATLANTIC OCEAN

By F. A. YOUNG

The weather over the North Atlantic during January was most unusual in many respects. The number of days with gales was equal to or above the normal over the greater part of the ocean, except for the region east of the twentieth meridian, where it was considerably below. Vessels in the trans-Atlantic route often encountered a series of heavy storms, lasting in some cases from six to eight days, while the storm area extended much farther south than usual, as in the region between the Azores and Bermudas gales were reported on from five to six days.

As shown in Table 1, the average pressure was much below the normal at Horta and above at land stations on the British Isles. An area of high pressure covered the coast of northern Europe for the first 14 days of the month. At Lerwick the average barometric reading for this period was 30.55 inches, with the lowest reading of 30.20 inches on the 1st. The average reading at this station for the last 17 days of the month was 29.99 inches or 0.29 inch above the monthly normal.

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure at sea level, 8 a. m. (seventy-fifth meridian). North Atlantic Ocean, January, 1929*

Stations	Average pressure	Departure [1]	Highest	Date	Lowest	Date
	Inches	*Inch*	*Inches*		*Inches*	
Julianehaab, Greenland	[2] 29.52	(3)	30.20	11th	28.55	21st.
Belle Isle, Newfoundland	29.48	−0.32	30.34	6th	28.34	21st.
Halifax, Nova Scotia	29.84	−0.16	30.78	5th	29.18	29th.
Nantucket	29.99	−0.10	30.70	5th	29.52	19th.
Hatteras	30.11	−0.02	30.52	3d	29.68	6th.
Key West	30.08	−0.01	30.22	14th	29.84	29th.
New Orleans	30.12	+0.01	30.48	2d	29.76	5th.
Cape Gracias, Nicaragua	29.91	−0.03	29.96	7th [4]	29.88	5th. [4]
Turks Island	30.13	+0.08	30.20	7th [4]	29.92	30th.
Bermuda	30.21	+0.08	30.52	5th [4]	29.66	29th.
Horta, Azores	29.80	−0.30	30.28	3d [4]	29.20	29th.
Lerwick, Shetland Islands	30.24	+0.54	30.90	11th	29.69	19th.
Valencia, Ireland	30.20	+0.30	30.69	13th	29.57	31st.
London	30.28	+0.28	30.78	8th	29.90	15th.

[1] From normals shown on Hydrographic Office Pilot Chart, based on observations at Greenwich mean noon, or 7 a. m., seventy-fifth meridian time.
[2] Average of 27 observations.
[3] No normal available.
[4] And on other dates.

The number of days with fog was much below the normal over the Grand Banks and northern steamer lanes, where fog was not reported on more than four days in any 5-degree square. In the western section of the Gulf of Mexico it was unusually prevalent, occurring on eight days, and on three days off the coast of Portugal.

During the first seven days of the month the middle and eastern sections of the steamer lanes were swept by a series of severe gales; on the 6th and 7th the storm area extended as far south as the Azores and to the eastward as far as the twentieth meridian. On the 8th moderate conditions prevailed generally, with the exception of the disturbance near the Azores, which by that time had moderated considerably.

On the 10th a severe disturbance of limited extent was central near 38° N., 37° W., while strong southerly gales also prevailed along the American coast between Hatteras and New York. By the 11th the southern LOW had decreased in intensity although northwest gales were still encountered by vessels near 35° N., 40° W., and southwesterly winds of force 7 to 10 in the region between the Bermudas and Newfoundland.

The next storm occurred on the 14th and was central near Sydney, Nova Scotia; this was of limited extent, although whole gales prevailed between the fortieth parallel and Newfoundland, while moderate weather was the rule over the remainder of the ocean.

From the 16th to the 19th the middle section of the steamer lanes was swept by moderate to strong gales, and on the latter date southwesterly winds of force 7 to 8 occurred west of the sixty-fifth meridian, between the thirty-fifth parallel and Nova Scotia.

Charts VIII to XIII cover the period from the 20th to 25th inclusive, and give an idea of the exceptionally stormy conditions that prevailed over the western and middle sections of the steamer lanes. It was on the evening of the 23d that the crew of the Italian S. S. *Florida* was rescued by a boat crew from the American S. S. *America*, Capt. George Fried. The observer on board the *America*, Mr. John Hultman, rendered a most interesting special report of the weather conditions experienced by his ship from 8 a. m. on the 20th to midnight on the 24th. Observations were taken every two hours until noon of the 21st, and every four hours during the remainder of the period. The force of the wind varied from 7 to 11 with the exception of a lull to force 3 in the early morning of the 21st, and again to force 4 at 4 p. m. on the 23d. The lowest barometer was 28.58 inches at 6 a. m. on the 21st, in 44° 22′ N., 51° 12′ W., and the highest force of wind, west 11, from 10 a. m. to 2 p. m. on the 20th, and again from 4 p. m. on the 21st to 8 a. m. on the 22d. At 8 p. m. on the 23d, near the time of rescue, the ship was in 40° 30′ N., 57° 30′ W., wind NW. 9, barometer 28.99; raining.

From the 26th until the end of the month, heavy weather continued in southern waters, the storm area on several days extending as far south as the thirtieth parallel, while during part of this period moderate to strong gales also prevailed along the American coast.

On the 30th and 31st southerly and westerly winds of force 7 and 8 were reported by vessels between the twentieth meridian and French coast.